

DRY ETCHING AND MIRROR DEPOSITION PROCESSES FOR SILICONE ELASTOMER

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Abstract of the Disclosure

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According to the invention semiconductor processing procedures can be applied to silicone elastomeric materials. The surface tension of the elastomeric material is changed by depositing a thin layer of silicon, silicon nitride, silicon dioxide or a combination thereof onto the elastomer's exposed surface. In the illustrated embodiment it is shown that it is possible to deposit a thin layer of silicon dioxide onto the elastomer's exposed surface through re*active sputter deposition of silicon dioxide within an argon-oxygen plasma. In another plasma fabrication procedure, the elastomer material is directionally etched using a standard RF plasma etching system and a dry chemical oxygen-Freon removal procedure, which procedure volatilizes all of the components of the polydimethylsilicone (PDMS) or GE's RTV elastomer material.